Walnutdale Dairy

4-24-13 CNMP Field Additions
Records

Prepared by:

Green Valley
AGRICULTURAL, INC.

April 24, 2013

April 24, 2013

Walnutdale Dairy – CAFO

Field Additions – Spring 2013

Mr. Bruce Washburn,

Mr. [redacted] is submitting these fields for review and addition to his CNMP for the 2013 crop season. Physical evaluations of slopes and setbacks and a crop plan have been developed and are submitted for review. Soil tests were taken and are currently at A&L Labs. When samples are reported, they will be included with a crop plan and manure application plan reflecting targeted crops and fertility needs.

The fields attached will not receive manure applications when the ground is frozen or snow covered, but MARI evaluations have been included for reference. MARI evaluations will be updated when soil tests are reported.

Manure Application Rates will be established when soil tests are reported.

Crop Plans & Recommendations:

The Home West, East and South fields are alfalfa; the remaining Middle field is going to be planted for grain corn. Recommendations for crop production and manure utilization will be included with the soil test update.

RUSLE2 Evaluations:

All fields are within the tolerable range of predicted soil erosion.

Wind Erosion Evaluations:

Wind erosion reviews were conducted on the fields with I values of 86 or higher. The predicted rates of wind erosion on all fields are below the tolerable limit.

Please review the information attached and contact [redacted] or myself with any questions on these fields.

Thank you,

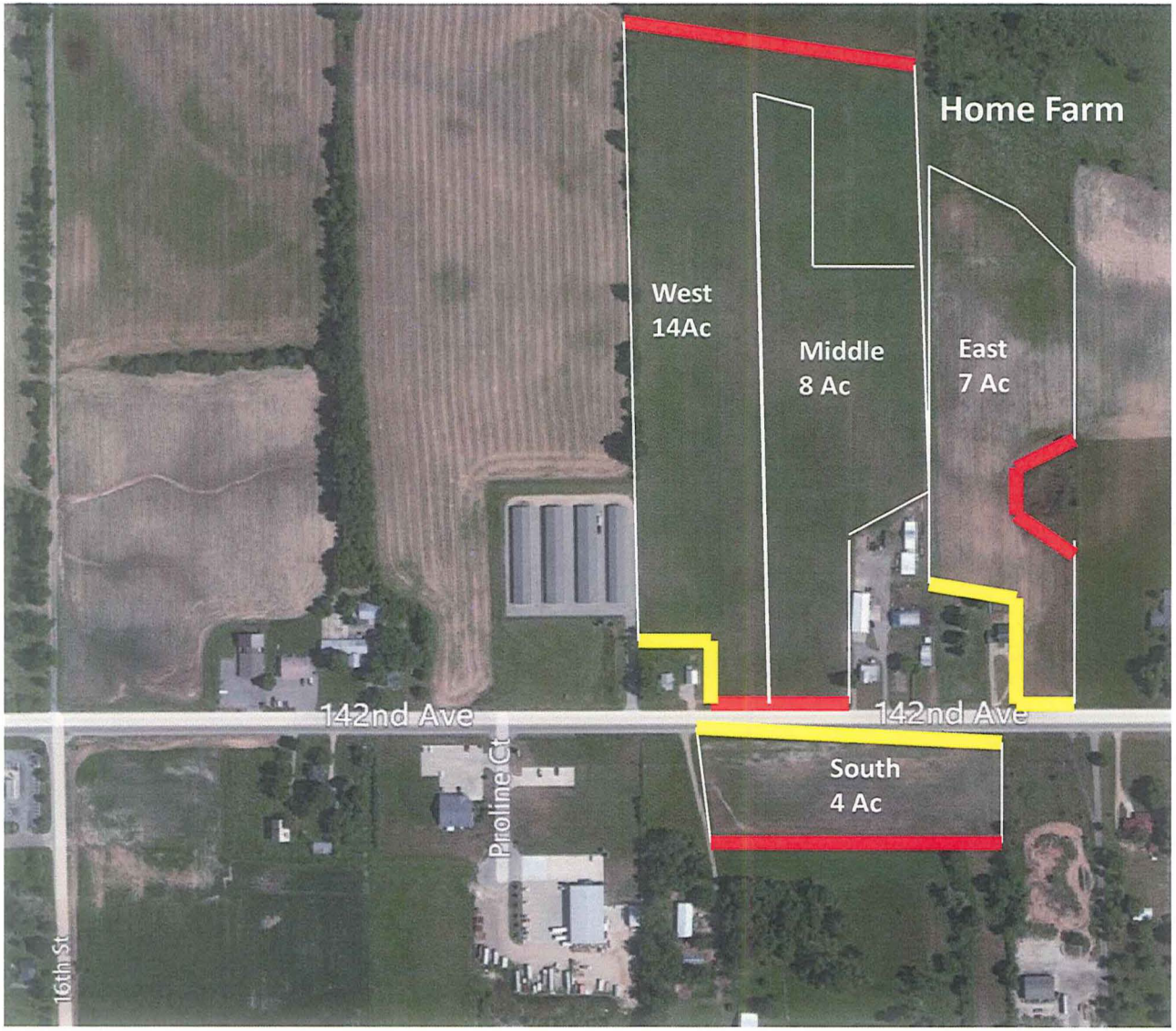
Jason Stegink – Green Valley Agricultural, Inc.

3957 108th St. SE • Caledonia, MI 49316 • (616) 891-0075 • Fax (616) 891-0311
5476 136th Avenue • Hamilton, MI 49419 • (269) 751-5856 • Fax (269) 751-7098
54200 28th Avenue • Bangor, MI 49013 • (269) 427-8206 • Fax (269) 427-7720
11471 Lake Michigan Drive • West Olive, MI 49460 • (616) 842-4181 • Fax (616) 842-5511
7199 Kalamazoo Avenue, Suite 220 • Caledonia, MI 49316 • (616) 656-2690 • Fax (616) 656-2915

Walnutdale Dairy Spreading

(b) (6) [redacted]

Township: Dorr
Section(s): 14&23
Fields:



Home West, Middle, East and South

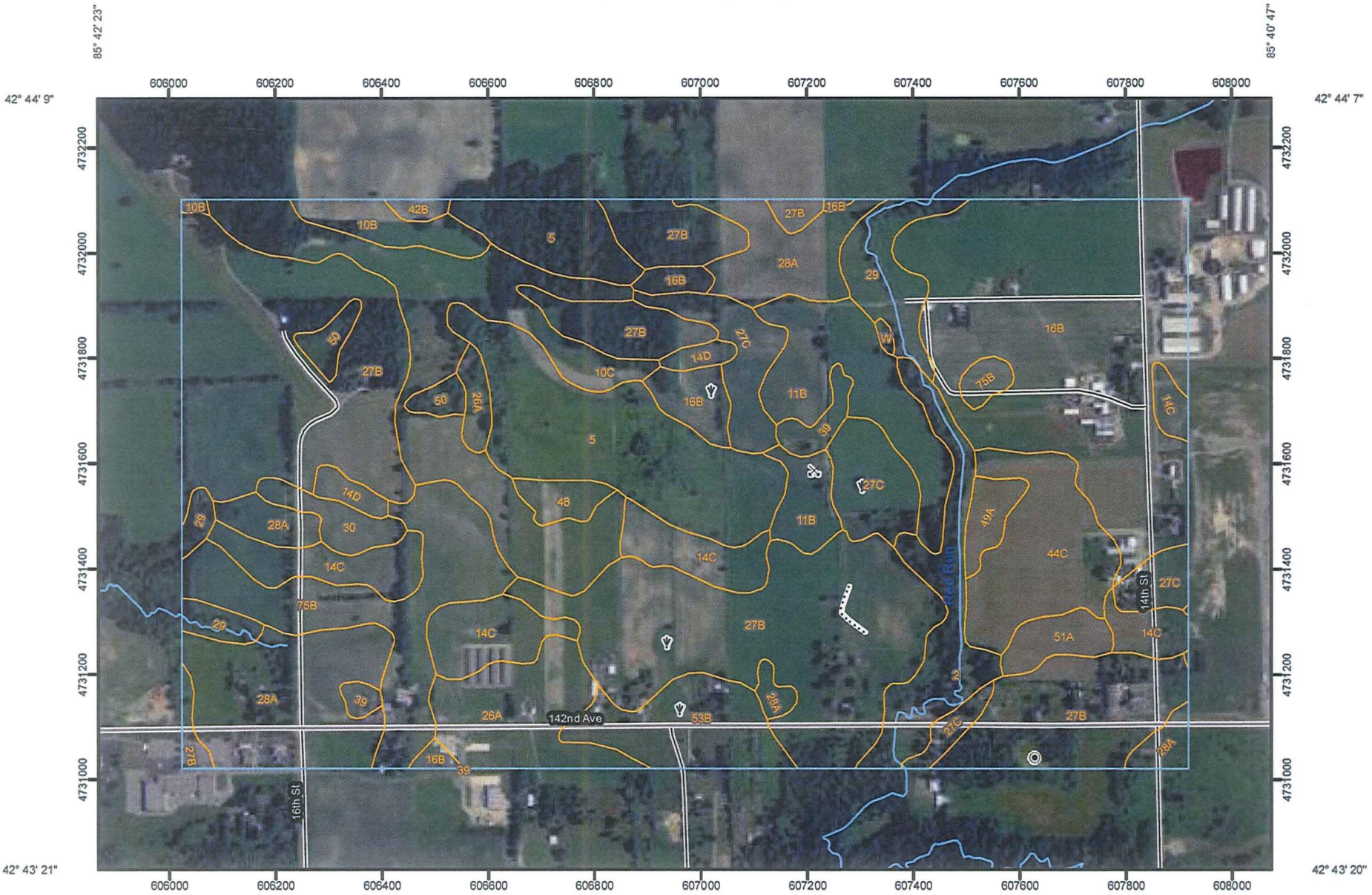
North:

	Never apply manure under any conditions (min. 100' witdth)
	Applications under excellent conditions with 24hr incorp.

Revised: 4-24-13

Green Valley Agricultural, Inc.

Soil Map—Allegan County, Michigan
(Dorr Sec 14 Bastian North)



Map Scale: 1:10,500 if printed on A size (8.5" x 11") sheet.

N

Meters
0 100 200 400 600

Feet
0 500 1,000 2,000 3,000

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Units

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other

Special Line Features
- Gully
- Short Steep Slope
- Other

Political Features
- Cities

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

MAP INFORMATION

Map Scale: 1:10,500 if printed on A size (8.5" × 11") sheet.

The soil surveys that comprise your AOI were mapped at 1:15,840.

Please rely on the bar scale on each map sheet for accurate map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: UTM Zone 16N NAD83

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Allegan County, Michigan
Survey Area Data: Version 9, Sep 28, 2012

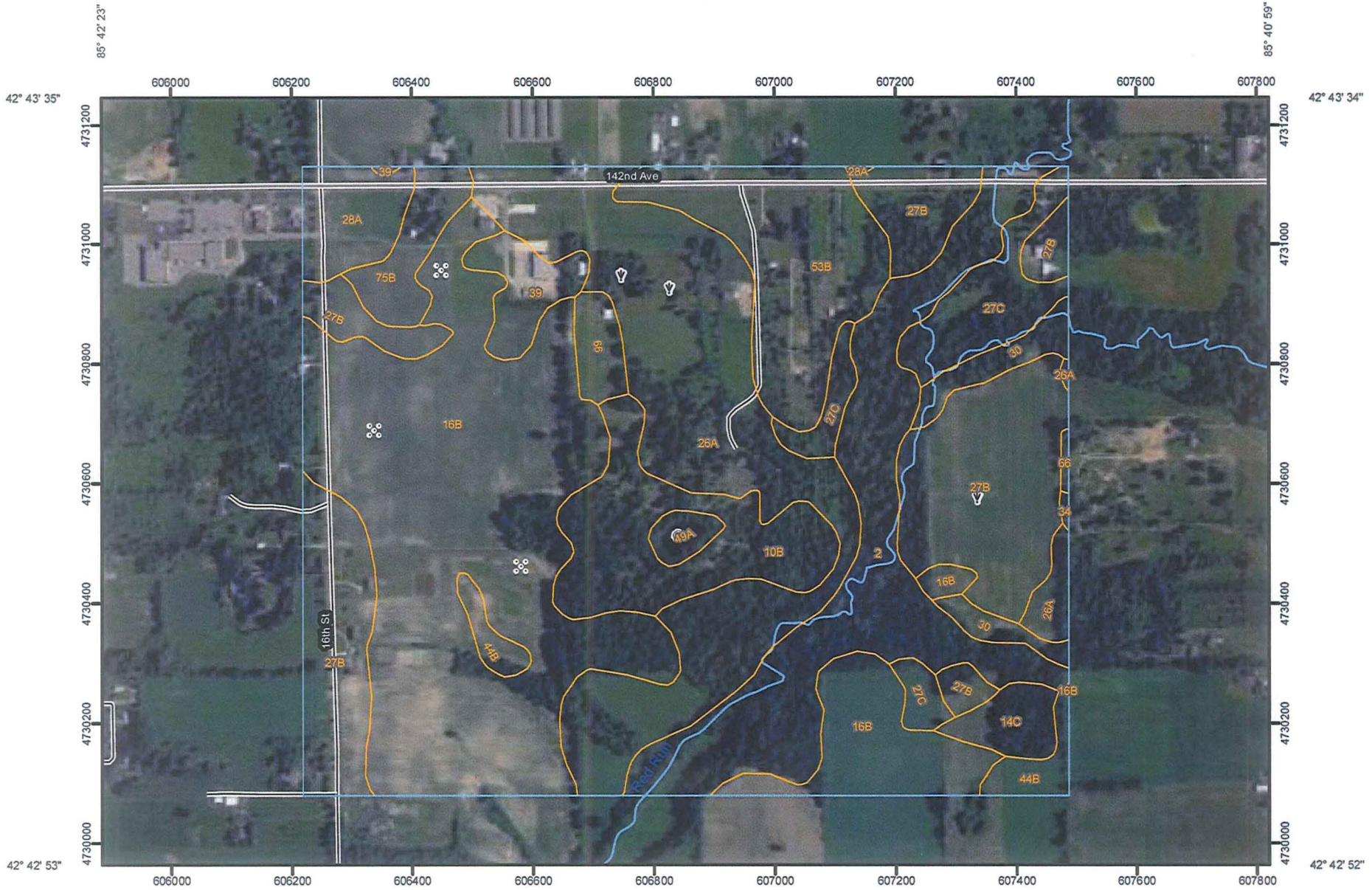
Date(s) aerial images were photographed: 6/22/2005

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Allegan County, Michigan (MI005)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
2	Glendora loamy sand	14.9	2.9%
5	Houghton muck	38.6	7.6%
10B	Oakville fine sand, 0 to 6 percent slopes	5.7	1.1%
10C	Oakville fine sand, 6 to 18 percent slopes	36.2	7.1%
11B	Oshtemo-Chelsea complex, 0 to 6 percent slopes	21.2	4.2%
14C	Marlette loam, 6 to 12 percent slopes	25.7	5.1%
14D	Marlette loam, 12 to 18 percent slopes	3.2	0.6%
16B	Capac loam, 0 to 6 percent slopes	70.3	13.9%
26A	Pipestone sand, 0 to 4 percent slopes	17.2	3.4%
27B	Metea loamy fine sand, 1 to 6 percent slopes	125.4	24.7%
27C	Metea loamy fine sand, 6 to 12 percent slopes	20.5	4.0%
28A	Rimer loamy sand, 0 to 4 percent slopes	38.9	7.7%
29	Cohoctah silt loam	11.8	2.3%
30	Colwood silt loam	4.1	0.8%
39	Granby loamy sand	3.4	0.7%
42B	Metamora sandy loam, 1 to 4 percent slopes	1.0	0.2%
44C	Chelsea loamy fine sand, 6 to 12 percent slopes	17.3	3.4%
48	Belleville loamy sand	2.8	0.6%
49A	Tedrow fine sand, 0 to 4 percent slopes	3.1	0.6%
50	Aquents and Histosols, ponded	3.5	0.7%
51A	Thetford loamy fine sand, 0 to 4 percent slopes	4.1	0.8%
53B	Oakville fine sand, loamy substratum, 0 to 6 percent slopes	12.7	2.5%
75B	Marlette-Capac loams, 1 to 6 percent slopes	25.5	5.0%
W	Water	0.4	0.1%
Totals for Area of Interest		**507.6**	**100.0%**

Soil Map—Allegan County, Michigan
(Dorr Sec 23 Bastian South)



Map Scale: 1:9,180 if printed on A size (8.5" x 11") sheet.

N

Meters
0 100 200 400 600

Feet
0 500 1,000 2,000 3,000

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Units

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other

Special Line Features
- Gully
- Short Steep Slope
- Other

Political Features
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Please rely on the bar scale on each map sheet for accurate map measurements.

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Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: UTM Zone 16N NAD83

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Allegan County, Michigan
Survey Area Data: Version 9, Sep 28, 2012

Date(s) aerial images were photographed: 6/22/2005

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Allegan County, Michigan (MI005)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
2	Glendora loamy sand	37.4	11.4%
10B	Oakville fine sand, 0 to 6 percent slopes	19.6	6.0%
14C	Marlette loam, 6 to 12 percent slopes	4.2	1.3%
16B	Capac loam, 0 to 6 percent slopes	91.7	27.9%
26A	Pipestone sand, 0 to 4 percent slopes	55.7	16.9%
27B	Metea loamy fine sand, 1 to 6 percent slopes	49.1	14.9%
27C	Metea loamy fine sand, 6 to 12 percent slopes	13.7	4.1%
28A	Rimer loamy sand, 0 to 4 percent slopes	7.2	2.2%
30	Colwood silt loam	5.7	1.7%
34	Aquents, sandy and loamy	0.2	0.1%
39	Granby loamy sand	5.6	1.7%
44B	Chelsea loamy fine sand, 0 to 6 percent slopes	4.7	1.4%
49A	Tedrow fine sand, 0 to 4 percent slopes	1.9	0.6%
53B	Oakville fine sand, loamy substratum, 0 to 6 percent slopes	22.9	7.0%
66	Udipsamments, nearly level to gently sloping	3.6	1.1%
75B	Marlette-Capac loams, 1 to 6 percent slopes	6.0	1.8%
Totals for Area of Interest		329.2	100.0%

Information About RUSLE2 Soil Loss

Field: [redacted] W PB-W
Operation: Walnutdale Farm
Plan File: C:\Local Cloud\Shared\Manure Plan Documents\Walnutdale Dairy CNMP Data\Walnutdale Dairy 2013.mmp *Last Saved:* 4/24/2013*
RUSLE2 Database: C:\Program Files (x86)\USDA\Rusle2\Import\BASE_NRCS_MOSES_040110.gdb
Calculated Profile: mmp_calc\Walnutdale Dairy 2013.mmp[redacted] W PB-W
Calculated Mgmt: CMZ 04\c.Other Local Mgt Records\mmp_calc\Walnutdale Dairy 2013.mmp[redacted] W PB-W

Field's RUSLE2 Profile

Climate Location: USA\Michigan\Allegan County
Soil Survey: Allegan County, Michigan
Soil Type: 10C OAKVILLE FINE SAND, 6 TO 18 PERCENT SLOPES\Oakville fine sand 98%
Slope: 16%
Slope Length: 400 feet
Rock Cover: (Not entered -- 0% assumed)
Subsurface Drainage: (No patterned drainage -- none used)
Contouring: (Not selected -- rows up-and-down hill assumed)
Strips/Barriers: (Not selected -- none assumed)
Diversion/Terrace: (Not selected -- none assumed)
Residue Burial: (Not selected -- normal burial assumed)
Notes:

Field's RUSLE2 Management

Date mm/dd/yyyy	*Operation*	*Vegetation*	*Yield or Cover Material*	*Cover Material Added/Removed*
05/25/2008	*Harvest, hay, legume*	*Alfalfa, yr4 regrowth after cutting*	*1.3 tons*	*405 lbs*
07/01/2008	*Harvest, hay, legume*	*Alfalfa, yr4 regrowth after cutting*	*1.3 tons*	*308 lbs*
08/10/2008	*Harvest, hay, legume*	*Alfalfa, yr4 senes to yr5 regrowth*	*1.5 tons*	*324 lbs*
05/25/2009	Harvest, hay, legume	Alfalfa, yr4 regrowth after cutting	1.3 tons	405 lbs
07/01/2009	Harvest, hay, legume	Alfalfa, yr4 regrowth after cutting	1.3 tons	308 lbs
08/10/2009	Harvest, hay, legume	Alfalfa, yr4 senes to yr5 regrowth	1.5 tons	324 lbs
05/25/2010	Harvest, hay, legume	Alfalfa, yr4 regrowth after cutting	1.3 tons	405 lbs
07/01/2010	Harvest, hay, legume	Alfalfa, yr4 regrowth after cutting	1.3 tons	308 lbs
08/10/2010	Harvest, hay, legume	Alfalfa, yr4 senes to yr5 regrowth	1.5 tons	324 lbs
05/25/2011	Harvest, hay, legume	Alfalfa, yr4 regrowth after cutting	1.3 tons	405 lbs
07/01/2011	Harvest, hay, legume	Alfalfa, yr4 regrowth after cutting	1.3 tons	308 lbs
08/10/2011	Harvest, hay, legume	Alfalfa, yr4 senes to yr5 regrowth	1.5 tons	324 lbs

Michigan MARI	Manure Application Risk Index										
Version 4 Nov 2008	Fill in shaded areas only!		ctrl "c" to clear sheet								
Business Name:	Walnutdale Dairy				Date	4/24/2013					
Farm name:	Ned W	Ned W	(b) (6) r	Bast W	Bast M	Bast E	Bast S				
Tract Numbers:											
Section:	Dorr 07	Dorr 07	Dorr 12	Dorr 14	Dorr 14	Dorr 14	Dorr 23				
Field No:	Ned WN	Ned WS	(b) (6)	PB-W	PB-M	PB-E	PB-S				
Acres:	22	23	60	14	8	7	4				
FIELD FEATURES "INPUT"											
I. SOIL											
If drained, enter Y											
Insert Soil Series	Capac	Rimer	Capac	Oakville	Metea	Metea	Rimer				
1. Soil Hydrologic Group	C	C	C	A	B	B	C	#N/A	#N/A	#N/A	#N/A
2. Soil Management Group (SMG)	2.5b-s	3b	2.5b-s	5a	4/2a	4/2a	3b				
3. Percent Slope	3	2	2	16	12	4	3				
II. WATER QUALITY											
4. Soil Test Phosphorus Value	206	296	46								
5. Conc. Water/Surface Inlet	s	f	f	s	s	s	s				
6. Nitrogen leaching Index	m	m	m	H	m	m	m				
Prompt for cell above	Map	Map	Map	Map	m	m	Map	#N/A	#N/A	#N/A	#N/A
III. SURFACE COVER											
7. Residue/Cover Crops/Per. Cover	70	70	70	70	40	50	50				
8. Surface Water Setback	4	1	4	2	1	8	8				
9. Vegetative Buffer Width											
IV. MANURE											
10. Manure Phosphorus Application	58	58	94								
11. Manure Nitrogen Application	70	70	145								
12. Manure Application Method	SI	SI	DI	S>3	DI	S>3	S>3				
Manure Application Description	(1)DI Direct Inject (2)SI Surface apply incorp. In 2 days (4)S<3 Surf. apply incorp. In 90 days (8)S>3 Surf. apply left more than 90 days										

Michigan MARI	Manure Application Risk Index										
Version 4 Nov 2008	Fill in shaded areas only!		ctrl "c" to clear sheet								
Business Name:	Walnutdale Dairy				Date	4/24/2013					
Farm name:	Ned W	Ned W	(b) (6)	Bast W	Bast M	Bast E	Bast S				
Tract Numbers:											
Section:	Dorr 07	Dorr 07	Dorr 12	Dorr 14	Dorr 14	Dorr 14	Dorr 23				
Field No:	Ned WN	Ned WS	(b) (6)	PB-W	PB-M	PB-E	PB-S				
Acres:	22	23	60	14	8	7	4				
FIELD FEATURES "OUTPUT"											
I. SOIL	2.5b-s	3b	2.5b-s	5a	4/2a	4/2a	3b				
1. Soil Hydrologic Group	4	4	4	1	2	2	4	#N/A	#N/A	#N/A	#N/A
2. Soil Management Group	2	2	2	1	2	2	2	#N/A	#N/A	#N/A	#N/A
3. Percent Slope	2	2	2	8	8	4	2	1	1	1	1
II. WATER QUALITY											
4. Soil Test Phosphorus Value	12	12	3								
5. Conc. water flow or inlet discharge	6	3	3	6	6	6	6	FALSE	FALSE	FALSE	FALSE
6. Nitrogen Leaching Index for SMG	6	6	6	12	6	6	6				
III. SURFACE COVER											
7. Residue/Cover Crop/Per. Cover	1	1	1	1	1	1	1				
8. Surface Water Setback	4	1	4	2	1	8	8	0	0	0	0
9. Vegetative Buffer Width	12	12	12	12	12	12	12	12	12	12	12
IV. MANURE											
10. Manure "P" Application	2	2	4	1	1	1	1	1	1	1	1
11. Manure "N" Application	2	2	4	1	1	1	1	1	1	1	1
12. Manure Application Method	SI	SI	DI	S>3	DI	S>3	S>3	0	0	0	0
Field Features Index Totals	53	47	45	45	40	43	43	#N/A	#N/A	#N/A	#N/A
	High	High	Medium	High	High	Medium	Medium	#N/A	#N/A	#N/A	#N/A
Total Acres by MARI risk	0	0	71	67	138						
Category	V. low	Low	Medium	High	Total		0	Total Low and Very low risk acres			

Field: [redacted] W PB-W
Operation: Walnutdale Farm
Plan File: C:\Local Cloud\Shared\Manure Plan Documents\Walnutdale Dairy CNMP Data\Walnutdale Dairy 2013.mmp *Last Saved:* 4/24/2013*
RUSLE2 Database: C:\Program Files (x86)\USDA\Rusle2\Import\BASE_NRCS_MOSES_040110.gdb
Calculated Profile: mmp_calc\Walnutdale Dairy 2013.mmp[redacted] W PB-W
Calculated Mgmt: CMZ 04\c.Other Local Mgt Records\mmp_calc\Walnutdale Dairy 2013.mmp[redacted] W PB-W

Date mm/dd/yyyy	*Operation*	*Vegetation*	*Yield or Cover Material*	*Cover Material Added/Removed*
06/01/2012	Harvest, hay, legume	Alfalfa, yr4 regrowth after cutting	1.2 tons	405 lbs
07/15/2012	Harvest, hay, legume	Alfalfa, yr4 regrowth after cutting	1.2 tons	319 lbs
09/01/2012	Harvest, hay, legume	Alfalfa, yr4 senes to yr5 regrowth	1.7 tons	324 lbs
05/25/2013	Harvest, hay, legume	Alfalfa, yr4 regrowth after cutting	1.3 tons	449 lbs
07/01/2013	Harvest, hay, legume	Alfalfa, yr4 regrowth after cutting	1.3 tons	308 lbs
08/10/2013	Harvest, hay, legume	Alfalfa, yr4 senes to yr5 regrowth	1.5 tons	324 lbs

Note: Operations for the field's assumed previous crop (in italics) were included to initialize RUSLE2.

Field's RUSLE2 Soil Loss Estimates

Crop Year	*Starting Date mm/dd/yyyy*	*Ending Date mm/dd/yyyy*	*Soil Loss Tons/Acre*	*Crop(s)*
2009	08/11/2008	08/10/2009	1.6	Alfalfa topdress
2010	08/11/2009	08/10/2010	1.7	Alfalfa topdress
2011	08/11/2010	08/10/2011	1.7	Alfalfa topdress
2012	08/11/2011	09/01/2012	2.0	Alfalfa topdress
2013	09/02/2012	08/10/2013	1.2	Alfalfa topdress

RUSLE2 Version: 1.32.3.0
RUSLE2 Build Date: Dec 17 2007
RUSLE2 Science Date: 20061020

Information About RUSLE2 Soil Loss

Field: [redacted] M PB-M
Operation: Walnutdale Farm
Plan File: C:\Local Cloud\Shared\Manure Plan Documents\Walnutdale Dairy CNMP Data\Walnutdale Dairy 2013.mmp *Last Saved:* 4/24/2013*
RUSLE2 Database: C:\Program Files (x86)\USDA\Rusle2\Import\BASE_NRCS_MOSES_040110.gdb
Calculated Profile: mmp_calc\Walnutdale Dairy 2013.mmp\[redacted] M PB-M
Calculated Mgmt: CMZ 04\c.Other Local Mgt Records\mmp_calc\Walnutdale Dairy 2013.mmp\[redacted] M PB-M

Field's RUSLE2 Profile

Climate Location: USA\Michigan\Allegan County
Soil Survey: Allegan County, Michigan
Soil Type: 27B METEA LOAMY FINE SAND, 1 TO 6 PERCENT SLOPES\Metea loamy fine sand 90%
Slope: 12%
Slope Length: 300 feet
Rock Cover: (Not entered -- 0% assumed)
Subsurface Drainage: (No patterned drainage -- none used)
Contouring: (Not selected -- rows up-and-down hill assumed)
Strips/Barriers: (Not selected -- none assumed)
Diversion/Terrace: (Not selected -- none assumed)
Residue Burial: (Not selected -- normal burial assumed)
Notes:

Field's RUSLE2 Management

Date mm/dd/yyyy	*Operation*	*Vegetation*	*Yield or Cover Material*	*Cover Material Added/Removed*
05/01/2008	*Planter, double disk opnr w/fluted coulter*	*Corn, grain*	*150 bushels*	
10/20/2008	*Harvest, killing crop 50pct standing stubble*			*4114 lbs*
05/25/2009	Harvest, hay, legume	Alfalfa, yr4 regrowth after cutting	1 tons	
07/01/2009	Harvest, hay, legume	Alfalfa, yr4 regrowth after cutting	1 tons	237 lbs
08/10/2009	Harvest, hay, legume	Alfalfa, yr4 senes to yr5 regrowth	1.1 tons	249 lbs
05/25/2010	Harvest, hay, legume	Alfalfa, yr4 regrowth after cutting	1 tons	297 lbs
07/01/2010	Harvest, hay, legume	Alfalfa, yr4 regrowth after cutting	1 tons	237 lbs
08/10/2010	Harvest, hay, legume	Alfalfa, yr4 senes to yr5 regrowth	1.1 tons	249 lbs
05/25/2011	Harvest, hay, legume	Alfalfa, yr4 regrowth after cutting	1 tons	297 lbs
07/01/2011	Harvest, hay, legume	Alfalfa, yr4 regrowth after cutting	1 tons	237 lbs
08/10/2011	Harvest, hay, legume	Alfalfa, yr4 senes to yr5 regrowth	1.1 tons	249 lbs
05/01/2012	Planter, double disk opnr w/fluted coulter	Corn, silage	15 tons	639 lbs

Field: [redacted] M PB-M
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Calculated Mgmt: CMZ 04\c.Other Local Mgt Records\mmp_calc\Walnutdale Dairy 2013.mmp[redacted] M PB-M

Date mm/dd/yyyy	*Operation*	*Vegetation*	*Yield or Cover Material*	*Cover Material Added/Removed*
09/15/2012	Harvest, silage			529 lbs
05/01/2013	Planter, double disk opnr w/fluted coulter	Corn, grain	150 bushels	
10/20/2013	Harvest, killing crop 50pct standing stubble			4114 lbs

Note: Operations for the field's assumed previous crop (in italics) were included to initialize RUSLE2.

Field's RUSLE2 Soil Loss Estimates

Crop Year	*Starting Date mm/dd/yyyy*	*Ending Date mm/dd/yyyy*	*Soil Loss Tons/Acre*	*Crop(s)*
2009	10/21/2008	08/10/2009	0.1	Alfalfa topdress
2010	08/11/2009	08/10/2010	0.3	Alfalfa topdress
2011	08/11/2010	08/10/2011	0.9	Alfalfa topdress
2012	08/11/2011	09/15/2012	1.7	Corn silage
2013	09/16/2012	10/20/2013	3.6	Corn grain

RUSLE2 Version: 1.32.3.0
RUSLE2 Build Date: Dec 17 2007
RUSLE2 Science Date: 20061020

Information About RUSLE2 Soil Loss

Field: [redacted] E PB-E
Operation: Walnutdale Farm
Plan File: C:\Local Cloud\Shared\Manure Plan Documents\Walnutdale Dairy CNMP Data\Walnutdale Dairy 2013.mmp *Last Saved:* 4/24/2013*
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Calculated Mgmt: CMZ 04\c.Other Local Mgt Records\mmp_calc\Walnutdale Dairy 2013.mmp[redacted] E PB-E

Field's RUSLE2 Profile

Climate Location: USA\Michigan\Allegan County
Soil Survey: Allegan County, Michigan
Soil Type: 27B METEA LOAMY FINE SAND, 1 TO 6 PERCENT SLOPES\Metea loamy fine sand 90%
Slope: 4%
Slope Length: 150 feet
Rock Cover: (Not entered -- 0% assumed)
Subsurface Drainage: (No patterned drainage -- none used)
Contouring: (Not selected -- rows up-and-down hill assumed)
Strips/Barriers: (Not selected -- none assumed)
Diversion/Terrace: (Not selected -- none assumed)
Residue Burial: (Not selected -- normal burial assumed)
Notes:

Field's RUSLE2 Management

Date mm/dd/yyyy	*Operation*	*Vegetation*	*Yield or Cover Material*	*Cover Material Added/Removed*
05/15/2008	*Drill or air seeder single disk openers 7-10 in spac.*	*Soybean, mw 7in rows*	*45 bu*	*1800 lbs*
10/10/2008	*Harvest, killing crop 20pct standing stubble*			*1227 lbs*
04/28/2009	Chisel, twisted shovel			
04/28/2009	Cultivator, field 6-12 in sweeps			
05/01/2009	planter, double disk opnr	Corn, grain	150 bushels	
10/20/2009	Harvest, killing crop 50pct standing stubble			4114 lbs
10/27/2009	Disk, tandem light finishing			
05/15/2010	Drill or air seeder single disk openers 7-10 in spac.	Soybean, mw 7in rows	45 bu	
10/10/2010	Harvest, killing crop 20pct standing stubble			1227 lbs
05/01/2011	Planter, double disk opnr w/fluted coulter	Corn, grain	150 bushels	
10/20/2011	Harvest, killing crop 50pct standing stubble			4114 lbs
04/10/2012	Chisel, twisted shovel			

Field: [redacted] E PB-E
Operation: Walnutdale Farm
Plan File: C:\Local Cloud\Shared\Manure Plan Documents\Walnutdale Dairy CNMP Data\Walnutdale Dairy 2013.mmp *Last Saved:* 4/24/2013*
RUSLE2 Database: C:\Program Files (x86)\USDA\Rusle2\Import\BASE_NRCS_MOSES_040110.gdb
Calculated Profile: mmp_calc\Walnutdale Dairy 2013.mmp\[redacted] E PB-E
Calculated Mgmt: CMZ 04\c.Other Local Mgt Records\mmp_calc\Walnutdale Dairy 2013.mmp\[redacted] E PB-E

Date mm/dd/yyyy	*Operation*	*Vegetation*	*Yield or Cover Material*	*Cover Material Added/Removed*
04/15/2012	Cultivator, field 6-12 in sweeps			
04/15/2012	Drill or airseeder, double disk	Alfalfa, spring seed	1 Tons	
07/15/2012	Harvest, hay, legume	Alfalfa, spring seed regrowth after cutting	1 tons	270 lbs
09/01/2012	Harvest, hay, legume	Alfalfa, spring seed senes to y2 regrowth	2.5 tons	270 lbs
05/25/2013	Harvest, hay, legume	Alfalfa, yr4 regrowth after cutting	1.3 tons	661 lbs
07/01/2013	Harvest, hay, legume	Alfalfa, yr4 regrowth after cutting	1.3 tons	308 lbs
08/10/2013	Harvest, hay, legume	Alfalfa, yr4 senes to yr5 regrowth	1.5 tons	324 lbs

Note: Operations for the field's assumed previous crop (in italics) were included to initialize RUSLE2.

Field's RUSLE2 Soil Loss Estimates

Crop Year	*Starting Date mm/dd/yyyy*	*Ending Date mm/dd/yyyy*	*Soil Loss Tons/Acre*	*Crop(s)*
2009	10/11/2008	10/20/2009	1.6	Corn grain
2010	10/21/2009	10/10/2010	0.7	Soybean
2011	10/11/2010	10/20/2011	1.0	Corn grain
2012	10/21/2011	09/01/2012	0.6	Alfalfa seeding
2013	09/02/2012	08/10/2013	0.5	Alfalfa topdress

RUSLE2 Version: 1.32.3.0
RUSLE2 Build Date: Dec 17 2007
RUSLE2 Science Date: 20061020

Information About RUSLE2 Soil Loss

Field: [redacted] S PB-S
Operation: Walnutdale Farm
Plan File: C:\Local Cloud\Shared\Manure Plan Documents\Walnutdale Dairy CNMP Data\Walnutdale Dairy 2013.mmp *Last Saved:* 4/24/2013*
RUSLE2 Database: C:\Program Files (x86)\USDA\Rusle2\Import\BASE_NRCS_MOSES_040110.gdb
Calculated Profile: mmp_calc\Walnutdale Dairy 2013.mmp\[redacted] S PB-S
Calculated Mgmt: CMZ 04\c.Other Local Mgt Records\mmp_calc\Walnutdale Dairy 2013.mmp\[redacted] S PB-S

Field's RUSLE2 Profile

Climate Location: USA\Michigan\Allegan County
Soil Survey: Allegan County, Michigan
Soil Type: 28A RIMER LOAMY SAND, 0 TO 4 PERCENT SLOPES\Rimer loamy sand 90%
Slope: 3%
Slope Length: 150 feet
Rock Cover: (Not entered -- 0% assumed)
Subsurface Drainage: (No patterned drainage -- none used)
Contouring: (Not selected -- rows up-and-down hill assumed)
Strips/Barriers: (Not selected -- none assumed)
Diversion/Terrace: (Not selected -- none assumed)
Residue Burial: (Not selected -- normal burial assumed)
Notes:

Field's RUSLE2 Management

Date mm/dd/yyyy	*Operation*	*Vegetation*	*Yield or Cover Material*	*Cover Material Added/Removed*
05/25/2008	*Harvest, hay, legume*	*Alfalfa, yr4 regrowth after cutting*	*1.3 tons*	*405 lbs*
07/01/2008	*Harvest, hay, legume*	*Alfalfa, yr4 regrowth after cutting*	*1.3 tons*	*308 lbs*
08/10/2008	*Harvest, hay, legume*	*Alfalfa, yr4 senes to yr5 regrowth*	*1.5 tons*	*324 lbs*
04/24/2009	Disk, tandem secondary op.			2378 lbs
04/28/2009	Cultivator, field 6-12 in sweeps			
05/01/2009	planter, double disk opnr	Corn, grain	125 bushels	
10/20/2009	Harvest, killing crop 50pct standing stubble			3471 lbs
05/05/2010	Disk, tandem secondary op.			
05/15/2010	Cultivator, field 6-12 in sweeps			
05/15/2010	Drill or airseeder, double disk	Soybean, mw 7in rows	40 bu	
09/20/2010	Harvest, killing crop 20pct standing stubble			1346 lbs
09/25/2010	Drill or air seeder single disk openers 7-10 in spac.	Rye, cereal	35 bushels	

Field: [redacted] S PB-S
Operation: Walnutdale Farm
Plan File: C:\Local Cloud\Shared\Manure Plan Documents\Walnutdale Dairy CNMP Data\Walnutdale Dairy 2013.mmp *Last Saved:* 4/24/2013*
RUSLE2 Database: C:\Program Files (x86)\USDA\Rusle2\Import\BASE_NRCS_MOSES_040110.gdb
Calculated Profile: mmp_calc\Walnutdale Dairy 2013.mmp[redacted] S PB-S
Calculated Mgmt: CMZ 04\c.Other Local Mgt Records\mmp_calc\Walnutdale Dairy 2013.mmp[redacted] S PB-S

Date mm/dd/yyyy	*Operation*	*Vegetation*	*Yield or Cover Material*	*Cover Material Added/Removed*
07/20/2011	Harvest, killing crop 50pct standing stubble			1491 lbs
08/15/2011	Drill or airseeder, double disk	Alfalfa, fall seed senes to yr2 regrowth	0.7 tons	
06/01/2012	Harvest, hay, legume	Alfalfa, yr2 regrowth after cutting	0.7 tons	179 lbs
07/15/2012	Harvest, hay, legume	Alfalfa, yr2 regrowth after cutting	0.7 tons	186 lbs
09/01/2012	Harvest, hay, legume	Alfalfa, yr2 regrowth after cutting	2.5 tons	189 lbs
05/25/2013	Harvest, hay, legume	Alfalfa, yr4 regrowth after cutting	1.3 tons	675 lbs
07/01/2013	Harvest, hay, legume	Alfalfa, yr4 regrowth after cutting	1.3 tons	308 lbs
08/10/2013	Harvest, hay, legume	Alfalfa, yr4 senes to yr5 regrowth	1.5 tons	324 lbs

Note: Operations for the field's assumed previous crop (in italics) were included to initialize RUSLE2.

Field's RUSLE2 Soil Loss Estimates

Crop Year	*Starting Date mm/dd/yyyy*	*Ending Date mm/dd/yyyy*	*Soil Loss Tons/Acre*	*Crop(s)*
2009	08/11/2008	10/20/2009	0.9	Corn grain
2010	10/21/2009	09/20/2010	0.6	Soybean
2011	09/21/2010	07/20/2011	0.4	Rye grain
2012	07/21/2011	09/01/2012	0.7	Alfalfa seeding
2013	09/02/2012	08/10/2013	0.2	Alfalfa topdress

RUSLE2 Version: 1.32.3.0
RUSLE2 Build Date: Dec 17 2007
RUSLE2 Science Date: 20061020

Wind Erosion Worksheet

based on Wind Erosion Worksheet found in Section 1 FOTG

Client:	Field #:	Date:	County
Walnutdale	(b) (6) PB-W	4/24/2013	Allegan

Soil "I" Value - refer to Section II of the FOTG

	Name	#	I value	T
Soil Type 1:	Oakville	10C	250	5
Soil Type 2:	Marlette	14C	56	5

Soil Roughness (Ridge) Value (Krd) - *refer to Table 5, Section 1 FOTG

	Tillage used for Krd	Krd Value
Present	none	1.0
Planned	none	1

Climatic Factor - refer to table 2 Section 1 FOTG

County: Allegan Climatic Factor: 8

"L" - Length of Unsheltered Distance

		Windbreak adjustments:		Or calculated "L" (Table 4)			Adjusted "L"
Soil Type 1:	Measured "L"	Height	Type:	Angle	Adj factor	Field width	value (Ft)
Present	670	20	fenceline				470
Planned	670	20	fenceline				470
		Windbreak adjustments:		Or calculated "L" (Table 4)			Adjusted "L"
Soil Type 2:	Measured "L"	Height	Type:	Angle	Adj factor	Field width	value (Ft)
Present	340	20	fenceline				140
Planned	340	20	fenceline				140

"V" - Vegitative Factor (Small Grain equivalent) for each crop in rotational period

	Present Crop	Residue	% residue Cover	Lbs residue	Manure rate	SGe (Fig. a-1 to c-2.) Table 1
Soil Type 1:	Alfalfa	Alfalfa	60%	1300	0	2700
Soil Type 2:	Alfalfa	Alfalfa	60%	1300	0	2700
	Planned Crop	Residue	% residue Cover	Lbs residue	Manure rate	SGe (Fig. a-1 to c-2.) Table 2
Soil Type 1:	Alfalfa	Alfalfa	60%	1300	0	2700
Soil Type 2:	Alfalfa	Alfalfa	60%	1300	0	2700

"E" Estimated Annual Soil Loss by wind Erosion (from "E" tables Section 1 FOTG)

	Present Crop	Soil Loss	Planned Crop	Soil Loss	Average Soil Loss	Tolerable (T/ac)
Soil Type 1:	Alfalfa	0	Alfalfa	0	**0**	**5**
Soil Type 2:	Alfalfa	0	Alfalfa	0	**0**	**5**

Comments:

The estimated rate of soil erosion on this field is below the tolerable limit.

Wind Erosion Worksheet

based on Wind Erosion Worksheet found in Section 1 FOTG

Client:	Field #:	Date:	County
Walnutdale	(b) (6) PB-M	4/24/2013	Allegan

Soil "I" Value - refer to Section II of the FOTG

	Name	#	I value	T
Soil Type 1:	Bellville	48	134	4
Soil Type 2:	Oakville	10C	250	5

Soil Roughness (Ridge) Value (Krd) - *refer to Table 5, Section 1 FOTG

	Tillage used for Krd	Krd Value
Present	None	1.0
Planned	None	1

Climatic Factor - refer to table 2 Section 1 FOTG

County: Allegan Climatic Factor: 8

"L" - Length of Unsheltered Distance

		Windbreak adjustments:		Or calculated "L" (Table 4)			Adjusted "L"
Soil Type 1:	Measured "L"	Height	Type:	Angle	Adj factor	Field width	value (Ft)
Present	670	20	fenceline				470
Planned	670	20	fenceline				470
		Windbreak adjustments:		Or calculated "L" (Table 4)			Adjusted "L"
Soil Type 2:	Measured "L"	Height	Type:	Angle	Adj factor	Field width	value (Ft)
Present	600	20	fenceline				400
Planned	600	20	fenceline				400

"V" - Vegitative Factor (Small Grain equivalent) for each crop in rotational period

	Present Crop	Residue	% residue Cover	Lbs residue	Manure rate	SGe (Fig. a-1 to c-2.) Table 1
Soil Type 1:	Silage Corn	Silage Corn		350	9000 Gal	700
Soil Type 2:	Silage Corn	Silage Corn		350	9000 Gal	700
	Planned Crop	Residue	% residue Cover	Lbs residue	Manure rate	SGe (Fig. a-1 to c-2.) Table 2
Soil Type 1:	Grain Corn	Grain Corn	60%	1250	0	
Soil Type 2:	Grain Corn	Grain Corn	60%	1250	0	

"E" Estimated Annual Soil Loss by wind Erosion (from "E" tables Section 1 FOTG)

	Present Crop	Soil Loss	Planned Crop	Soil Loss	Average Soil Loss	Tolerable (T/ac)
Soil Type 1:	Silage Corn	0.7	Grain Corn	0.2	**0.45**	**4**
Soil Type 2:	Silage Corn	3.4	Grain Corn	1.3	**2.35**	**5**

Comments:

The estimated rate of soil erosion on this field is below the tolerable limit.

Wind Erosion Worksheet

based on Wind Erosion Worksheet found in Section 1 FOTG

Client:	Field #:	Date:	County
Walnutdale	(b) (6) PB-E	4/24/2013	Allegan

Soil "I" Value - refer to Section II of the FOTG

	Name	#	I value	T
Soil Type 1:	Metea	27B	134	4
Soil Type 2:				

Soil Roughness (Ridge) Value (Krd) - *refer to Table 5, Section 1 FOTG

	Tillage used for Krd	Krd Value
Present	none	1.0
Planned	none	1

Climatic Factor - refer to table 2 Section 1 FOTG

County: Allegan Climatic Factor: 8

"L" - Length of Unsheltered Distance

		Windbreak adjustments:		Or calculated "L" (Table 4)			Adjusted "L"
Soil Type 1:	Measured "L"	Height	Type:	Angle	Adj factor	Field width	value (Ft)
Present	1000	20	fenceline				800
Planned	1000	20	fenceline				800
		Windbreak adjustments:		Or calculated "L" (Table 4)			Adjusted "L"
Soil Type 2:	Measured "L"	Height	Type:	Angle	Adj factor	Field width	value (Ft)
Present							0
Planned							0

"V" - Vegitative Factor (Small Grain equivalent) for each crop in rotational period

	Present Crop	Residue	% residue Cover	Lbs residue	Manure rate	SGe (Fig. a-1 to c-2.) Table 1
Soil Type 1:	Alfalfa	Alfalfa	40%	1050	0	
Soil Type 2:						
	Planned Crop	Residue	% residue Cover	Lbs residue	Manure rate	SGe (Fig. a-1 to c-2.) Table 2
Soil Type 1:	Alfalfa	Alfalfa	60%	1300	0	
Soil Type 2:						

"E" Estimated Annual Soil Loss by wind Erosion (from "E" tables Section 1 FOTG)

	Present Crop	Soil Loss	Planned Crop	Soil Loss	Average Soil Loss	Tolerable (T/ac)
Soil Type 1:	Alfalfa	1.2	Alfalfa	0.1	**0.65**	**4**
Soil Type 2:						

Comments:

The estimated rate of soil erosion on this field is below the tolerable limit.

Wind Erosion Worksheet

based on Wind Erosion Worksheet found in Section 1 FOTG

Client:	Field #:	Date:	County
Walnutdale	(b) (6) PB-S	4/24/2013	Allegan

Soil "I" Value - refer to Section II of the FOTG

	Name	#	I value	T
Soil Type 1:	Pipestone	26A	220	5
Soil Type 2:	Oakville	53B	250	4

Soil Roughness (Ridge) Value (Krd) - *refer to Table 5, Section 1 FOTG

	Tillage used for Krd	Krd Value
Present	none	1.0
Planned	none	1

Climatic Factor - refer to table 2 Section 1 FOTG

County: Allegan Climatic Factor: 8

"L" - Length of Unsheltered Distance

		Windbreak adjustments:		Or calculated "L" (Table 4)			Adjusted "L"
Soil Type 1:	Measured "L"	Height	Type:	Angle	Adj factor	Field width	value (Ft)
Present	670	30	fenceline				370
Planned	670	30	fenceline				370
		Windbreak adjustments:		Or calculated "L" (Table 4)			Adjusted "L"
Soil Type 2:	Measured "L"	Height	Type:	Angle	Adj factor	Field width	value (Ft)
Present	820	20	fenceline				620
Planned	820	20	fenceline				620

"V" - Vegitative Factor (Small Grain equivalent) for each crop in rotational period

	Present Crop	Residue	% residue Cover	Lbs residue	Manure rate	SGe (Fig. a-1 to c-2.) Table 1
Soil Type 1:	Alfalfa	Alfalfa	40%	1050	0	2700
Soil Type 2:	Alfalfa	Alfalfa	40%	1050	0	2700
	Planned Crop	Residue	% residue Cover	Lbs residue	Manure rate	SGe (Fig. a-1 to c-2.) Table 2
Soil Type 1:	Alfalfa	Alfalfa	60%	1300	0	2700
Soil Type 2:	Alfalfa	Alfalfa	60%	1300	0	2700

"E" Estimated Annual Soil Loss by wind Erosion (from "E" tables Section 1 FOTG)

	Present Crop	Soil Loss	Planned Crop	Soil Loss	Average Soil Loss	Tolerable (T/ac)
Soil Type 1:	Alfalfa	0.5	Alfalfa	0.3	**0.4**	**5**
Soil Type 2:	Alfalfa	3.2	Alfalfa	1.2	**2.2**	**4**

Comments:

The estimated rate of soil erosion on this field is below the tolerable limit.